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THE NEW TOWNS PROGRAM IN
GREAT BRITAIN

By T. C. Coote

CITY PLANNING DIVISION

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AMERICAN SOCIETY OF CIVIL ENGINEERS

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PAPERS

THE NEW TOWNS PROGRAM
IN GREAT BRITAIN

BY T. C. COOTE¹

SYNOPSIS

Beginning with the early history of the "Garden City" movement, the paper mentions the several steps in the implementation of the "new towns" program. The writer analyzes the types of new towns undertaken in England, Wales, and Scotland, and the reasons for them. The site investigation required before a proposed new city is authorized is described.

After development corporations have been established and after staff and offices have been obtained, the first step is to accumulate all necessary survey material relative to the site. This is followed by the preparation of a master plan which shows their broad intentions for the planning of the area. The surveys and the plan, together with an explanatory report, and a program for construction and estimates are submitted to the Minister of Town and Country Planning for his approval. Detailed layout plans for smaller areas within the framework then follow. The importance of teamwork in design and construction are emphasized. After mentioning the limited progress so far made, a brief review of some of the engineering problems is presented under headings of sewerage, water supplies, gas, electricity, streets, bicycle tracks, traffic circulation, and railway facilities.

EARLY DAYS

On June 10, 1899, Ebenezer Howard founded the Garden City Association in London (later named the Town and Country Planning Association), and public interest first began to be awakened in his garden city remedy for the evils of metropolitan overcrowding and the depopulation of rural areas. This led to the foundation of the first "garden city" at Letchworth in Hertfordshire, in 1903, and later to the establishment of Welwyn Garden City, in 1920

NOTE.—Written comments are invited for publication; the last discussion should be submitted by September, 1951.

¹ Senior Regional Planning Officer, Ministry of Town and Country Planning, London, England.

(see Fig. 1). In 1921 the reports of the Unhealthy Areas Committee (Ministry of Health) recommended the development of self-contained garden cities with State assistance in their early stages. Since early pioneering days other advocates, such as the late Sir Raymond Unwin, for the Greater London Regional Planning Committee (report of 1929 to 1933), A. Trystan Edwards with his

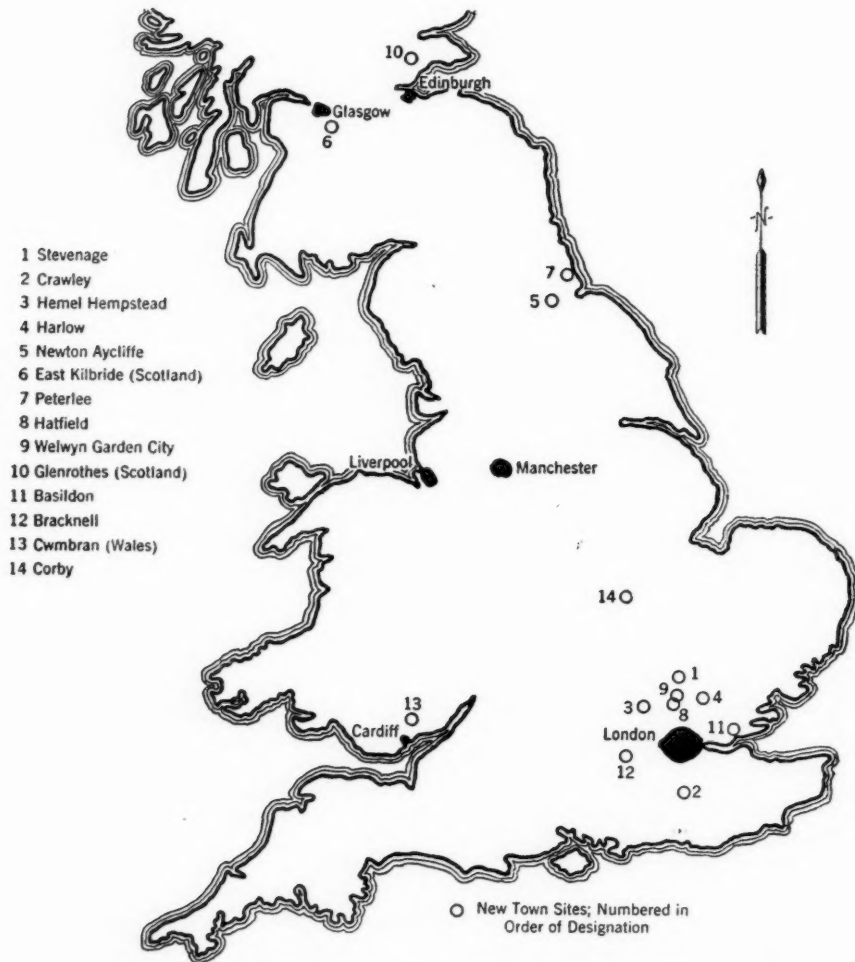


FIG. 1.—NEW TOWNS IN GREAT BRITAIN, AS OF JULY, 1949

"Hundred New Towns Association," in 1933, Thomas Adams, F. J. Osborn, Sir Patrick Abercrombie, and many others have urged forward the "new towns" idea. In 1932, with the passing of the Town and Country Planning Act, statutory provision was made for the development of garden cities under section 35 of that act.

The rapid growth of large cities in the years between World War I and World War II, and the further depopulation of rural areas, led the government to set up one royal commission and two committees—the Barlow,² the Scott,³ and the Uthwatt⁴—whose findings drew attention to the paramount importance of remedying these evils. The Barlow Commission specifically recommended⁵ the establishment

“* * * of garden cities, satellite towns and trading estates as a useful contribution * * * towards the solution of the problem of relieving overcrowded and congested urban areas * * *.”

In the County of London Plan⁶ and the Greater London Plan⁷ Sir Patrick recommended the immediate establishment of eight or ten new satellite towns to accommodate the population overflow from London.

THE NEW TOWNS

Following the publication of the Greater London Plan, a small group of technical officers of the Ministry of Town and Country Planning was formed in September, 1945, to prepare (as a matter of urgency) a master plan for the first of the new towns at Stevenage. As no New Towns Act then existed the Minister's powers were limited to those contained in section 35 of the Town and Country Planning Act (1932) mentioned previously.

At about the same time (October, 1945) the then Minister of Town and Country Planning, the Right Hon. Lewis Silkin, and the then Secretary of State for Scotland, the late Right Hon. Joseph Westwood, set up a New Towns Committee under the chairmanship of Lord Reith of Stonehaven to advise them on

“* * * general questions of the establishment, development, organisation and administration that will arise in the promotion of New Towns in furtherance of a policy of planned decentralisation from congested areas: and in accordance therewith to suggest guiding principles on which such towns should be established and developed as self-contained and balanced communities for work and living.”

The reports of this committee served as a basis for the New Towns Act which was passed through the Houses of Parliament without substantial party opposition and received royal assent in October, 1946. The Act gave power for the designation of areas for new towns and the setting up of “development corporations” to undertake the work of their design, construction, and management.

The Act was followed immediately by the designation of an area for the new town at Stevenage and very shortly thereafter by three others at Crawley,

² “Distribution of the Industrial Population,” *Report Cmd. 6153*, Royal Commission on the Distribution of the Industrial Population, His Majesty's Stationery Office, London, 1940.

³ “Land Utilization in Rural Areas,” *Report Cmd. 6378*, Committee on Land Utilization in Rural Areas, Ministry of Works and Planning, His Majesty's Stationery Office, London, 1942.

⁴ “Compensation and Betterment,” *Final Report Cmd. 6386*, Expert Committee on Compensation and Betterment, Ministry of Works and Planning, His Majesty's Stationery Office, London, 1946.

⁵ *Ibid.*, paragraph 291.

⁶ “County of London Plan, 1943,” by J. H. Forshaw and Sir Patrick Abercrombie, Report prepared for the London County Council, London, England.

⁷ “Greater London Plan, 1944,” by Sir Patrick Abercrombie, Report prepared for the Standing Conference on London (England) Regional Planning.

Hemel Hempstead, and Harlow. Objections by some residents in the areas concerned led to litigation which prevented the confirmation of three of the orders for several months.

TYPES OF NEW TOWNS

Of the four new towns (Nos. 1, 2, 3, and 4, Fig. 1), Stevenage and Harlow were located exactly as proposed by Sir Patrick in the Greater London Plan, whereas Hemel Hempstead and Crawley took the place of two other towns proposed by him on near-by sites. Pressure from housing authorities in the central areas, pending progress on the construction of the new towns beyond London's Green Belt, made necessary a considerable, although limited, amount of housing in the Green Belt itself. Further new towns have consequently been designated at Welwyn Garden City (No. 9) and Hatfield (No. 8) in the north, at Basildon (No. 11) on the east, and at Bracknell (No. 12) in the west. These eight London new towns, when fully developed, will provide for an overflow population of 270,000 persons. The total overflow for the London area, however, is of the order of 1,250,000 persons and a natural increase will further affect this total.

The London region, however, is not the only part of Great Britain to which the New Towns Act has been applied. At Peterlee (No. 7), near Easington, County Durham, a new town has been designated toward the eastern edge of the coalfield, where the newest pits are situated, beside the North Sea. Near by, inland, are a number of older pits with shorter periods of life, and each one with its old mining village clustered around the pit head. Housing conditions in these villages, by modern standards, are deplorable. Older houses are being demolished, and it has now been decided to concentrate replacements in the centrally situated new town called Peterlee where it will be possible to provide better shops, social facilities, schools, motion picture theaters, and so forth, and some employment for those women who wish to go out to work.

Investigations into the needs of the South Wales development area have also led to the designation of a new town at Cwmbran to the north of Newport in Monmouthshire (No. 13, Fig. 1). This site is just off the coalfield, and houses are needed for those persons, at present, or likely to be employed in the new factories erected there by the Board of Trade as part of the government's policy for the relief of unemployment in the South Wales Development Area.

Another type of new town is that designated at Newton Aycliffe (No. 5) in County Durham. During World War II a large royal ordnance factory was in operation at this site, and after the war this was converted into an industrial estate under the sponsorship of the Board of Trade. The plastic industry has also constructed a new factory on near-by land. Since this estate draws its labor from a radius as far away as twenty miles, it was decided to build a small new town immediately adjoining, yet separated from it, to house some of the workers and their families close to their source of employment.

Large cities, such as Liverpool and the Manchester conurbation, urgently require sites for the decentralization of population and workplaces, and the

late Minister of Town and Country Planning suggested to the planning authorities that two new towns might be needed in north Lancashire, but no decisions were made at the time. A further site to the south of Manchester is also being investigated.

In Scotland two new towns have been designated, at East Kilbride in Lanarkshire, to the south of Glasgow, and at Glenrothes in east Fife. East Kilbride lies over the 700-ft escarpment about seven miles from the center of Glasgow and will be required to accommodate the overflow of population and industry from that city and from northwest Lanarkshire. The government has also agreed that the new Mechanical Engineering Research Station of the Department of Scientific and Industrial Research should go to East Kilbride. This should employ about 10% of the future industrial population. Glenrothes lies about five miles north of Kirkcaldy and will be needed to house about a half of the anticipated increase of miners in the east Fife coalfield. The site was selected because it was the only area of adequate size sufficiently close to the new pits which was free from subsidence, did not involve good agricultural land, and was capable of being provided with main drainage and water supply.

Other new towns have been proposed for Scotland at Houston-Bishopton, Cumbernauld, and Lugton in the Clyde Valley and at Newton Grange, Prestonpans, Cumnock, and Lochgelly.

DETAILED INVESTIGATION OF SITES

Before the proposal to locate a new town has been agreed upon, inter-departmental consultations will have taken place and satisfactory answers received to such questions as: Are communications adequate? Can water, gas, and electricity be provided and can sewage be disposed of? Will industrialists go there? Can labor be found to build the town? Is the possible area free from subsidence? Is the region composed of high class farmland which should not be taken out of production? Will its location disturb the sphere of influence of other towns?

The detailed selection of the area to be designated remains to be considered. For the earliest new town at Stevenage the work was undertaken by the technical group of the Ministry of Town and Country Planning. For those at Crawley, Harlow, and Hemel Hempstead eminent town planning consultants were retained by the Minister to advise him on the areas to be designated. Plans showing farm boundaries and the farms that are the best economic units and have the best equipment in the way of buildings will have been obtained from the Ministry of Agriculture and Fisheries. Land liable to subsidence, flooding, and seepage will be avoided where possible. Fog, frost, and wind records will be examined, as will the geology, topography, and drainage areas. Steep slopes and rock outcrops will not be available for building. These and other factors will be taken into account when the consultant's preliminary plan is prepared. The plan will show that it is possible that a town of the requisite size could be built within the boundary to be designated and would satisfy the conditions and standards laid down. Approximately 900 acres per 10,000 population will be required.

PREPARATION OF MASTER PLAN

The first job of the development corporation is to produce a survey and an outline master plan. The survey will include: Topography, air photograph mosaics, geology and soil tests, existing land use, age and condition of the buildings (including those of architectural or historic merit), water resources

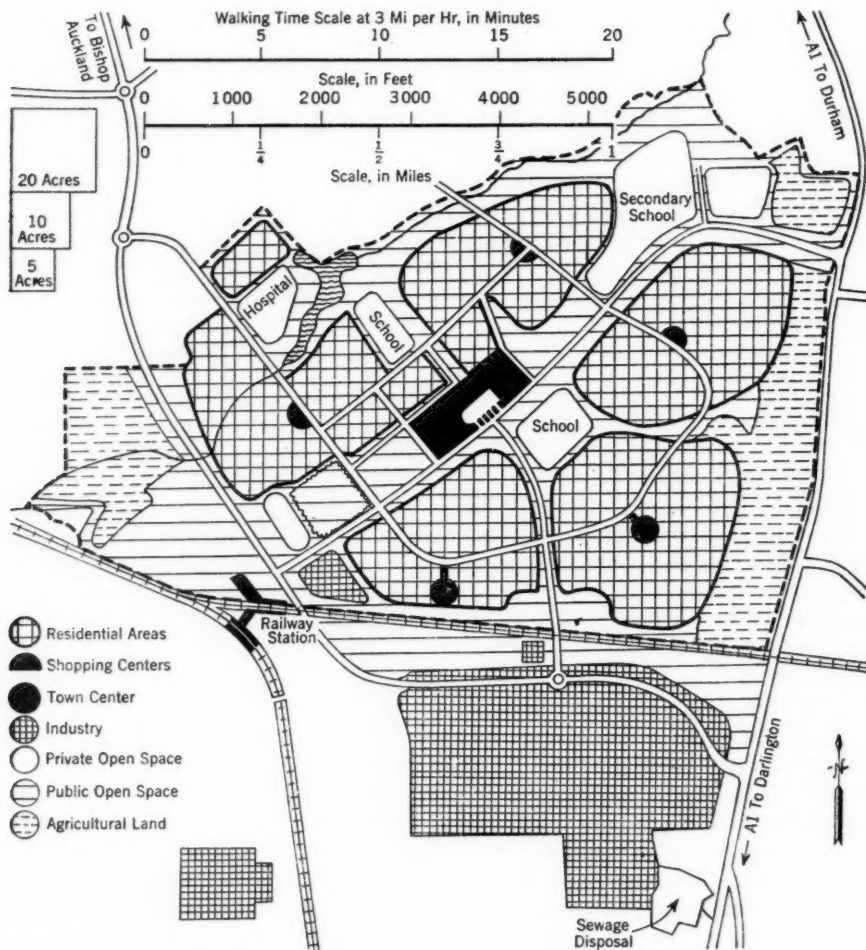


FIG. 2.—PLAN OF PROPOSED LAND USE, NEWTON AYCLIFFE

and mains, drainage areas and sewers, gasholders and mains, electricity stations and mains, post office cables and exchanges, roads and footpaths, bus routes, traffic flow, rail facilities, waterways, airports, farm units, and existing planting.

Only when the survey is complete can the master plan be designed. It will show the broad uses to which the land is to be put, namely: Residential,

industrial, principal roads, civic, commercial, and the main shopping center. It will also show the locations of the local shopping centers, schools and their playing fields, major open spaces, railway land, and other open land (Figs. 2, 3, and 4).

The surveys and master plan will be submitted to the Minister. They will be accompanied by an explanatory report which will include a broad statement of provisions (under separate heads), estimates of progress for the first three years, together with financial estimates and the labor requirements.

PREPARATION OF DETAILED PLANS

Not until the survey and master plan have been completed and the broad framework of the new town determined, will it be possible to proceed with the detailed design of the separate parts, such as the housing areas and shops lying within the framework.

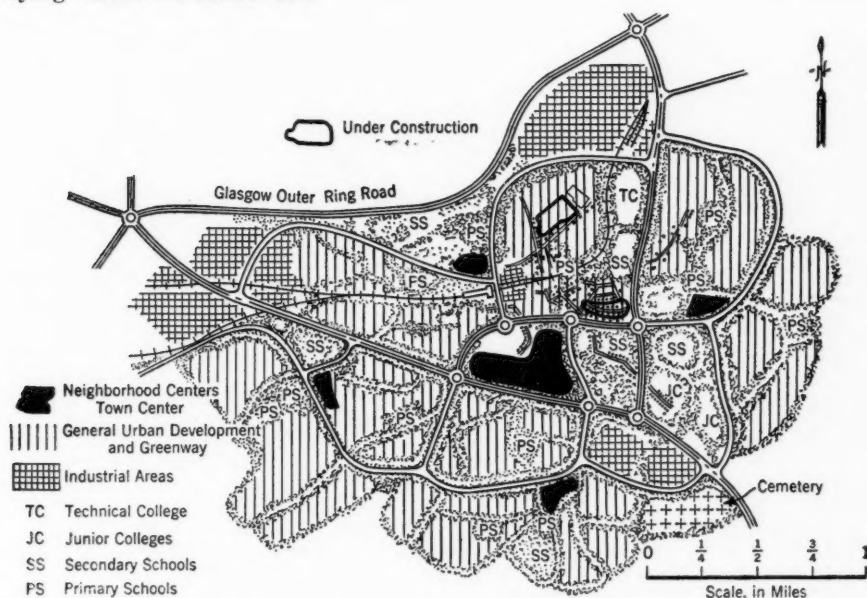


FIG. 3.—OUTLINE PLAN OF A NEW TOWN AT EAST KILBRIDE

Teamwork between the chief technical officers is an essential condition. As an example of such teamwork, one development corporation may be cited in which the chief architect or planning consultant is called on to produce numerous variations of possible layouts. These layouts are in turn submitted to joint meetings with the chief engineer whose requirements concerning the economics of the proposed services must be satisfied. The chief estates officer will state whether he can rent the properties in their proposed locations, and the chief legal officer will advise on the legal aspects. When plans seem reasonably economic the entire project is sent to the quantity surveyors to estimate the cost, and rentals are calculated. If these are unsatisfactory the

entire process is repeated again until the best result is achieved. All functions are under the controlling hand of the general manager to keep a proper balance.

STATUS OF CONSTRUCTION SCHEDULE

When this paper was originally written (in July, 1949), little actual construction work had been undertaken in the new towns. This situation arose

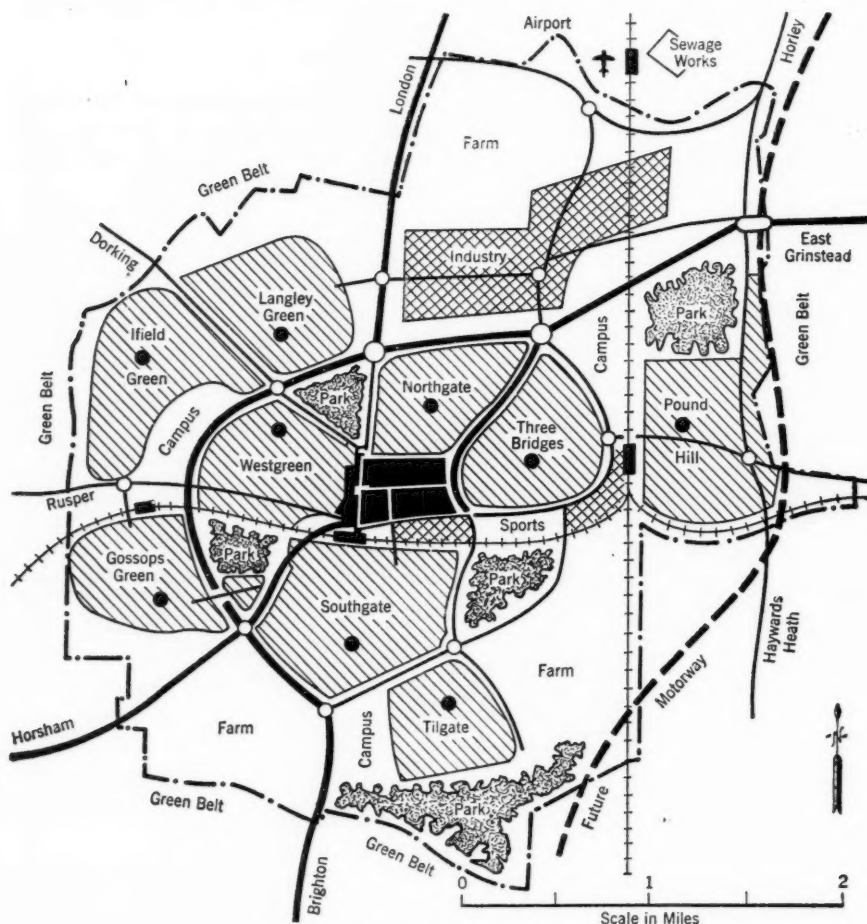


FIG. 4.—THE NEW TOWN OF CRAWLEY

partly through the necessity for investigating the nature of the sites thoroughly before beginning work, partly through the slow build-up of design staffs, and largely through the national limitation on capital expenditure. A token allocation of 300 men for civil engineering work in the London "new towns" enabled a start to be made in 1948 on the provision of the first roads and

services. Independently of this development, the inclusion of the new towns housing program in the national program (sponsored by the Ministry of Health) permitted a small number of houses to be erected by the development corporation. By November, 1950, however, all the older corporations had begun to make rapid strides forward. Actual construction work (see Table 1)

TABLE 1.—SCHEDULE OF DWELLING CONSTRUCTION, NEW TOWN PROGRAMS IN GREAT BRITAIN

NEW TOWN (EXCLUDING SCOTLAND)		ACTUAL STATUS ON OCTOBER 31, 1950			ESTIMATED STATUS ON DECEMBER 31, 1950		Plans for other buildings, etc. — approved November, 1950
Name	Fig. 1	Approved	Completed	Incomplete ^a	Complete	Incomplete ^a	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Basildon.....	11	267	....	....	....	180	One factory ^b
Bracknell ^c	12	....	....	....	....	50	First housing site approved November
Corby ^c	14	....	....	....	....	....	....
Crawley.....	2	726	69	436	240	450	Seven factories ^{b, d, e}
Cwmbran ^c	13	....	....	....	....	....	Corporation offices
Harlow.....	4	1,473	102	468	140	660	One factory; labor camp/ ^{e, f}
Hatfield.....	8	155	....	41	....	100	Eight workshops; temporary youth center
Hemel Hempstead...	3	653	102	535	200	520	Labor camp; two factories ^b ; fourteen shops
Newton Aycliffe ^c	5	467	131	124	210	270	....
Peterlee.....	7	352	....	120	....	250	....
Stevenage.....	1	393	24	241	130	600	Water supplies; two labor hostels; six shops/ ^j
Welwyn Garden City	9	279	16	123	60	230	Two factories; two factory extensions; eleven shops
Totals.....		4,066	444	2,088	980	3,310	

^a Number of dwellings under construction. ^b Part of industrial area site works under construction. ^c In all the New Towns except Bracknell, Corby, and Cwmbran. Civil engineering works to open sites for development are in progress (January 1951). ^d Part of main sewage works under construction. ^e Roads and sewers for two neighborhoods. ^f Part of industrial area layout approved. ^g Layout of two neighborhoods approved. ^h Trunk sewer from Harlow to Rye Meads (approx. five miles). ⁱ About half the main roads in town under construction. ^j Roads and sewers for one neighborhood.

was then being approved at an ever increasing rate. As more and more building and civil engineering labor can be brought to bear on the site, the speed of building will increase.

SEWERAGE

By the very nature of their site requirements, most of the new towns are reasonably separated from other townships. In the London area the construction of regional sewage disposal works is likely to cause delay in the rapid construction of some of the new towns. Hemel Hempstead and part of Hatfield lie within the drainage area of the Colne Valley Regional Sewerage Board, established before the war, and work on the disposal works and trunk mains is well in hand. In the case of Stevenage, Harlow, and Welwyn Garden City, there were no such project plans and it has been proposed that these towns and other towns in the natural drainage area shall combine to form the Middle Lee Regional Sewerage Board. Crawley, Bracknell, and Basildon

(near London), Aycliffe and Peterlee (in County Durham), and East Kilbride (in Scotland) will have their own sewage disposal works. Cwmbran in Wales and Glenrothes in Scotland will be in regional projects.

Separate systems for sanitary sewage and storm water will generally be installed. Consulting engineers have been appointed for most of the new towns under construction both for sewerage and water supplies.

WATER SUPPLIES

For the London new towns north of the Thames River water supplies will be obtained from deep wells drilled in the chalk. At Crawley the construction of an impounding reservoir to hold 1,200,000,000 gallons, formed by an earth dam, was begun in August, 1950. The cost of this project is estimated at more than a million pounds, and it will serve both the new town and surrounding areas.

GAS AND ELECTRICITY

The nationalization of gas and electricity in Great Britain and the formation of a gas council and of the British Electricity Authority have greatly simplified the negotiations for the supply of gas and electricity to the new towns. New towns were often in two or more statutory areas, and unification has meant that supplies can now come from one source with a consequent reduction in cost and with unified charges over the area.

DISTRICT HEATING

In the new towns it had been hoped to make considerable use of district heating and at Newton Aycliffe (Fig. 5) the work of design had proceeded to the final cost estimating stage. These estimates showed that an average weekly rental of about 9 shillings 4 pence would have been incurred all year, and it was felt that this cost would be too high. In consequence, district heating for the entire town was abandoned. A suitable boiler that could be spared was found at the royal ordnance factory, and it was proposed to use it as a source for district heating. The boiler would have generated about 100,000 lb of steam per hr at a pressure of 100 lb per sq in. The steam would have been fed through underground mains running in ducts to a ring main in the town. From this closed circuit branches would have been taken to five or more substations where the steam would heat up the water, the condensate being returned by pumps to the boiler house. The hot water would be circulated by pumps to the various houses and other buildings at a maximum temperature of 225° F flow and 175° F return through a two-pipe system designed to be reversible. The object of the reversibility was that during winter the water flowing in one direction would have entered both the heating radiators and hot water calorifier in each house; but in summer, when the flow was reversed, the circuit through the radiators would have been closed by a special nonreturn valve, leaving only the hot water supply calorifier in use.

At East Kilbride (see Fig. 3) groups of from 200 to 500 dwellings were linked to some heavier load such as a school and provided with hot water and

heating. Experience with the first groups in operation indicates a cost of about 9 shillings per week. Similar plans have been put into operation for about 800 houses at Glenrothes (location 1, Fig. 1).

It may be found, therefore, that a modified form of district heating will be possible where the density of development can be kept fairly high in the residential areas and these can be linked to heavier load users.

ROADS AND STREETS AND TRAFFIC CIRCULATION

Basic traffic safety considerations in all the new towns have led to a design pattern in which main and local through traffic by-passes the living or working areas. These areas, in turn, are connected to the through ways at a strictly limited number of access points, so placed as to provide the most convenient and shortest possible routes along the line of "drag." The heaviest traveled routes

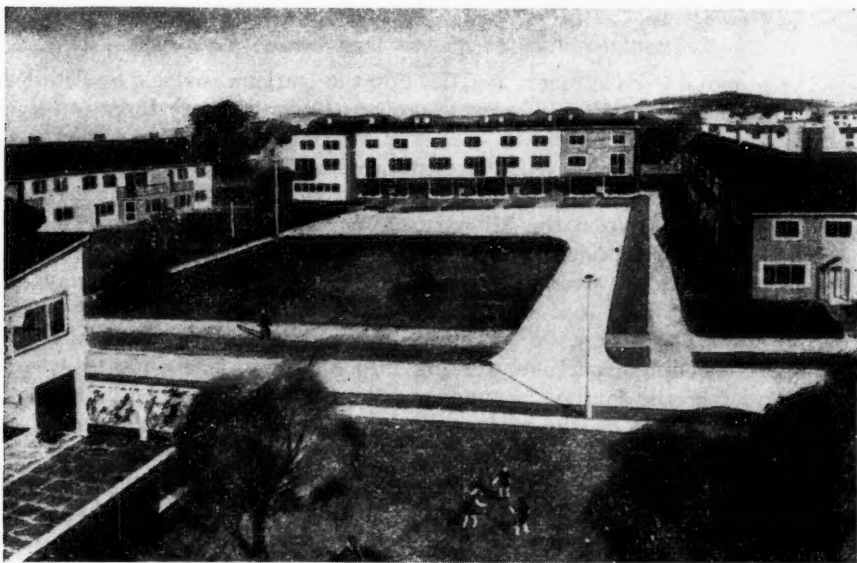


FIG. 5.—THE NEW TOWN OF NEWTON ATCLIFFE

will be "classified" according to the Ministry of Transport standards and rank for grant from the Road Fund, both for construction and maintenance. It is unlikely that the traffic generated inside any of the new towns will call for more than a single lane of a width of 22 ft or 30 ft, and this will be adequate for bus traffic; there will be no occasion for parking on these routes. Internal neighborhood streets will have roadways usually 16 ft or 20 ft wide where they act as collectors and less than that where they are purely "culs-de-sacs" or one-way lanes around greens.

Investigations are proceeding to determine whether it is desirable to construct separate lanes to accommodate cyclists, of whom there will be large numbers, going to and from work. It is likely that short lengths will be necessary at the factory approaches leading from the residential areas.

Research has led to changed ideas in design specifications for highways, and lighter forms of construction will be used than formerly. Soil surveys have been made and the most suitable locations for the roads determined. Stabilized base courses will be employed where suitable soils exist as at Stevenage. Construction of the first prestressed concrete road was completed at Crawley in the summer of 1950.

RAILWAYS

In selecting the sites for the new towns, care has been taken to see that existing railways are not overloaded. As the new towns are to be self-contained, commuting will not be encouraged. New stations usually will be necessary, however, and these will be combined with postal sorting offices. Additional railway sidings will be required to service the town, and some of the factories may want rail facilities.

EFFECTS OF SUBSIDENCE ON DESIGN AND LAYOUT

The proposal to construct a new town on the Durham coalfield at Peterlee raises interesting questions of programming. Under the site there are five workable seams from which the coal is in varying stages of extraction. A mining geologist was employed to prepare plans and sections of the workings, and a model was made to relate these workings to the surface of the ground. Structural engineers from the Ministry of Works have also reported on the probable effects of subsidence on the design of foundations and mains. The area is faulted and is overlain by post glacial deposits of boulder clay on magnesian limestone. It is worked from three different pits, and when extracting the coal, barriers are left at the ends of the workings from each pit to prevent flooding from one working into another. The effect of these barriers and of the faulting as underground working takes place produces complex movements on the surface of the ground. These movements are being studied carefully by releveling the surface of the ground above the workings at regular intervals of time. As far as possible construction will be undertaken on sites under which the greater part of the coal has been extracted and after time has been allowed for subsidence to occur. Land will thus be released for development according to a plan prepared jointly by the architect-planner and the National Coal Board officers.

THE NEW TOWN MASTER PLANS

Descriptive data applying to the new towns projects in Great Britain are presented in summarized form in Table 2. Unfortunately it is impossible to include illustrations of more than three of the master plans in a brief paper such as this. The three plans selected for illustration are as follows: (1) A London overflow town (Crawley); (2) a town that is dependent on an existing industrial estate (Newton Aycliffe); and (3) a Scottish new town (East Kilbride).

(1) *Crawley*.—The London overflow town of Crawley (see Fig. 4) consists of the two scattered townships of Crawley and Three Bridges. Old Crawley

High Street is now by-passed by a new length of the Brighton Road (route A 23). This will pass between the neighborhoods until relieved by a new motorway to be built on the east. The principal industrial area to the north will be accessible from either road. The central shopping area will be located off the existing High Street, exactly in the center of the town. There will be nine neighborhoods with populations varying between 4,300 and 8,000 people. The town is on the main railway from London to Brighton with a branch to Horsham. The land north of this branch line is very flat, and some pumping of sewage will be necessary.

(2) *Newton Aycliffe*.—The smallest of the new towns is Newton Aycliffe (Fig. 5). It has no marked physical features, but is bounded on the east by the Great North Road and on the south by the Railway and Trading Estate.

TABLE 2.—BASIC DATA, NEW TOWNS OF GREAT BRITAIN

NEW TOWN		Date of Designation Order	DESIGNATED AREA, IN ACRES		DENSITY OF BUILT-UP AREA		POPULATION		Open Space ^c
Name	(Fig. 1)		Total	Built-Up	Over-all ^a	Housing ^b	Existing	Ultimate	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Stevenage.....	1	Nov. 11, 1946	6,100	4,600	13.0	34.2	6,400	60,000	26.2
Crawley.....	2	Jan. 10, 1947	5,920	4,000	12.5	27.4 ^d	8,000	50,000	22.0
Hemel Hempstead....	3	Feb. 4, 1947	5,910	3,945	12.0	31.4	22,100	60,000	23.6
Harlow.....	4	March 25, 1947	6,320	4,235	14.1	33.0	4,300	60,000	23.3
Newton Aycliffe.....	5	April 19, 1947	867	743	13.4	31.6	60	10,000	19.5
East Kilbride.....	6	May 6, 1947	10,250	2,700	16.6 ^e	45 ^f	3,100	45,000 ^g	10.0
Peterlee.....	7	March 10, 1948	2,350	.....	.....	.....	100	30,000	.....
Hatfield.....	8	May 20, 1948	2,340	1,438	17.4	34.8	10,000	25,000	13.4
Welwyn Garden City	9	May 20, 1948	4,230	2,712	14.2	28.2	18,200	36,500	13.7
Glenrothes.....	10	June 30, 1948	5,730	1,854	16.2	45	500	30,000	12.5
Basildon.....	11	Jan. 4, 1949	7,834	.....	.....	.....	25,000	50,000	.....
Bracknell.....	12	June 17, 1949	1,850	.....	.....	.....	5,000	25,000	.....
Cwmbran.....	13	Nov. 4, 1949	3,160	.....	.....	.....	12,000	35,000	.....
Corby.....	14	April 1, 1950	2,500	.....	.....	.....	14,000	40,000	.....

^a Over-all density; persons per acre. ^b Average net density (approximate); persons per acre. ^c Open space of all kinds, in acres per thousand of ultimate population. ^d From 27.4 to 36 persons per acre. ^e From 16.6 to 18.5 over-all density of built-up area. ^f From 45 to 50 persons per acre. ^g From 45,000 to 50,000 ultimate population.

The absence of features enabled designers to produce a plain based on sociological studies of human needs and areas of activity, and for this purpose a professional sociologist was employed who worked with the architect-planner. The minor road system will link the living areas by a rail underpass to the industrial area. Through traffic will pass the new town on the west and on the east. The central area will be close to all houses. The town will be divided into five wards, each of about 500 houses, subdivided again into precincts, which are grouped around village greens without through traffic.

(3) *East Kilbride*.—The first Scottish new town was East Kilbride (Fig. 3). It will have four main neighborhoods subdivided into four or six smaller areas of about 500 houses. Two neighborhoods are large enough to support a primary school between them. Careful landscaping development is proposed

for valleys that are being retained as features. A tree nursery site has been acquired. Three industrial areas are proposed within easy walking or cycling distance of the houses; two of which can have rail facilities. A new central commercial area is planned, the existing village becoming a neighborhood center.

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